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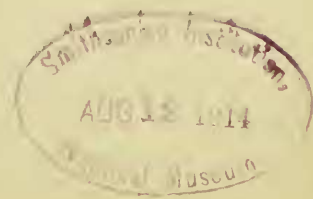
UNITED STATES AND MEXICAN RECORDS OF SPECIES OF THE GENUS DORU (DERMAP- TERA; FORFICULIDÆ).

BY JAMES A. G. REHN AND MORGAN HEBARD.

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The variability found in the species belonging to the present genus has caused numerous synonyms to be erected during the period when very few specimens were to be found in collections; this difficulty was augmented by the apparent fact that practically no actual comparisons were made. Recent efforts to retain some of these synonymic names in varietal rank have only served to augment the confusion. Study of the large series of specimens before us, and of Scudder's types, at once shows that three distinct species of the genus exist within our boundaries; one of these is widely distributed as far south as the Argentine Republic, in South America, the other two have never been found outside the United States. These species may be separated by the following key:

- A. Entire insect compact. Spine of pygidium of male not nearly as long as distal abdominal segment.
 - B. Wings exposed. Spine of pygidium of male acicular, not one half as long as distal abdominal segment. Forceps of male curving scarcely or very slightly upward in distal third. *lineare* (Eschscholtz).
 - BB. Wings not visible. Spine of pygidium of male acicular, one half as long as distal abdominal segment. Forceps of male curving more decidedly upward in distal third. *aculeatum* (Scudder).
- AA. Entire insect more attenuate. Spine of pygidium of male as long as, or



longer than, distal abdominal segment. (Wings not visible. Spine of pygidium of male strongly acicular. Forceps of male curving downward in proximal third, thence curving upward in a broad sweep to apex.).....*davisi* new species.

Doru lineare (Eschscholtz).

1822. *Forficula linearis* Eschscholtz, Entomogr., p. 81. (Santa Catharina, Brazil.)

1839. *Forficula suturalis* Serville, Hist. Nat. des Ins. Orth., p. 40. (Porto Allegro, Brazil.)

1862. *Forficula taniata* Dohrn, Stett. Ent. Zeit., XXIII, p. 230. (Oaxaca, Mirador, Mexico.)

1865. *F[orficula] californica* Dohrn, Stett. Ent. Zeit., XXVI, p. 85. (California.)

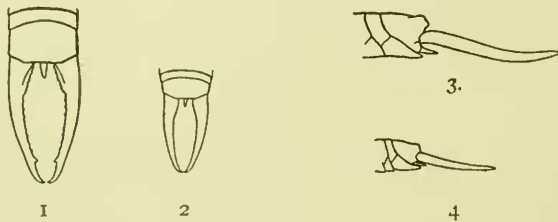
1876. *Forficula luteipes* Scudder, Proc. Bost. Soc. Nat. Hist., XVIII, p. 255. (Brazil.)

1876. *Forficula exilis* Scudder, Proc. Bost. Soc. Nat., XVIII, p. 262. (Texas.)

1891. *Sphingolabis meridionalis* Kirby (in part), Journ. Linn. Soc. London, Zoöl., XXIII, p. 529. (Theresopolis, Brazil.)

Type: Female; Santa Catharina, Brazil.

Scudder's descriptions in 1876 of the male as *Forficula exilis*, and of the female as *Forficula luteipes*, are as full as any published for the present species. Considerable variation is shown in size and color and also in the shape of the male forceps. Material from Texas, Mexico, Cuba, Nicaragua and Costa Rica includes the largest specimens and averages considerably larger than material from Arizona,



Dorsal outline of male forceps of *Doru linearis* (1; Brownsville, Texas) and (2; Baboquivari Mount, Ariz.)

Lateral outline of male forceps of *Doru lineare* (3; Brownsville, Texas) and (4; Baboquivari Mount, Ariz.)

California, Brazil and Argentina. In the series are a number of specimens which have the head and pronotum shining burnt sienna in general coloration instead of the usual shining blackish brown. The male forceps range from a rather heavy type, rather sharply bent at

the end of the proximal third and bearing a pronounced inner tooth at the beginning of the distal third, to a delicate, gently and almost evenly curved type in which the inner tooth at the base of the distal third is often wholly absent. It is not surprising that Dohrn considered a single specimen of this latter type a distinct species and named it *californica*, but in several of the series from a single locality the extremes of both are to be found, and *californica* can not be considered a race of *lineare* nor should the name be retained as Caudell has done.¹

MEASUREMENTS (IN MILLIMETERS), OF VARIOUS EXTREMES.

	Arizona.		Mexico.	Argentina.	
	Nogales.	Baboquivari Mts.	Cuernavaca, Morelos.	Misiones. ²	
	Male.	Male.	Males.	Male.	Female.
Length of body.....	11	8.9	10-14.8	10	10
Length of pronotum.....	1.6	1.6	1.8-2.1	1.4	1.4
Length of tegmen.....	3	2.9	3.2-4.3	3	2.9
Length of wings, folded...	4.9	4	4.9-6.7	4.5	4.1
Length of forceps.....	3.9	3.4	4-5.9	4.7	3.1
Length of pygidial spine..	.5	.4	.3-.5	.4	—

Specimens Examined from the United States and Mexico.—136; 71 males, 64 females, 1 nymph.

Texas (from P. R. Uhler), 1 male. Type of *F. exilis*. [Scudder Collection.]

Brownsville, Tex., July 31-Aug. 5, 1912, (H.), 1 male; (Wickham), 1 nymph. [Hebard Collection.]

Piper Plantation near Brownsville, Tex., Aug. 3, 1912 (R. & H.), 1 male. [Hebard Collection.]

Southern Arizona (H. Edwards), 2 males. [Am. Mus. Nat. Hist.]

Camp Grant, 60 mi. E. of Tucson, Ariz. (Palmer), 1 male. [Scudder Collection.]

¹ 1913. Proc. U. S. Nat. Mus., XLIV, p. 596. The effort in this paper to retain also the name *exilis* upon size, coupled with a slight and natural difference in abdominal width, is unwarranted. Study of an extensive series shows that, wherever a number of specimens from the same locality are available for examination, such size variation is found.

² The Territory of Misiones, Argentina, adjoins the State of Santa Catharina, Brazil, the type locality of the present species. The type, a small female, is given as 5 lines (10.5 mm.) long including the forceps, which are 1½ lines (2.7 mm.).

San Bernardino Ranch, Cochise Co., Ariz., 3,750 ft. (Snow), 2 males. [Acad. Nat. Sci. Phila.]

Nogales, Ariz., July 9, 1903 (Oslar), 2 males, 2 females. [Am. Mus. Nat. Hist. and Hebard Collection.]

Sycamore Cañon, Baboquivari Mts., Pima Co., Ariz., Oct. 6-9, 1910, 3,700 ft. (R. & H.), 2 males, 2 females. [Acad. Nat. Sci. Phila. and Hebard Collection.]

Copete Mines, 30 mi. E. of Carbo, Sonora, Mexico (F. V. Nicholas), 3 females. [Am. Mus. Nat. Hist.]

Escuinapa, Sinaloa, Mex. (J. H. Batty), 1 male, 1 female. [Am. Mus. Nat. Hist.]

Guajuca, 20 mi. E. of Monterey, Nuevo Leon, Mex. (Palmer), 2 males. [Scudder Collection.]

Monterey, N. Leon, Mex., March (Palmer), 2 males. [Scudder Collection.]

Victoria, Tamaulipas, Mex. (Barrett), 2 females. [Hebard Collection.]

Vera Cruz, Vera Cruz, Mex. (Sallé), 2 males. [Scudder Collection.]

Medellin, V. C., Mex., 1 male. [Hebard Collection.]

Huatusco V. C., Mex., 1,200 m. (C. Corrizatti), 1 male. [Scudder Collection.]

Jalapa, V. C., Mex., 1 male, 1 female; Aug.-Sept., 2 males, 4 females. [Acad. Nat. Sci. Phila. and Am. Mus. Nat. Hist.]

La Buena Ventura, V. C., Mex., 1 male. [Am. Mus. Nat. Hist.]

Orizaba, V. C., Mex., Jan. 9-16, 1892 (H. Osborn), 2 males; June 6, 1899 (Barrett), 1 male; Jan. 14, 1892 (Bruner), 29 males, 28 females. [Hebard Collection, Acad. Nat. Sci. Phila. and Scudder Collection.]

Texolo, V. C., Mex., 1890 (S. N. Rhoads), 1 male; Aug. (Barrett), 2 females. [Acad. Nat. Sci. Phila.]

Zopopan, Jalisco, Mex., Sept. 11, 1903, 5,500 ft. (Tower), 2 females. [Tower Collection.]

Ocatlan, Jal., Mex., Sept. 1903 (Tower), 1 male. [Tower Collection.]

Queretero, Mex., Nov. 1887 (Bruner), 1 male. [Hebard Collection.]

Joyutla, Morelos, Mexico, Aug. 1903 (Tower), 3 females. [Tower Collection.]

Cuernavaca, Mor., Mex., July 30, 1903, 5,021 ft. (Tower), 2 males, 3 females, in garden in town; slope W. of town, Aug. 1, 1903, 5,200 ft. (Tower), 1 male, semi-arid upland; Feb., June, Sept. (Barrett), 4 males, 2 females. [Tower Collection, Acad. Nat. Sci. Phila. and Hebard Collection.]

Matamoros, Mor., Mex., Aug. 12, 1903 (Tower), 1 male. [Tower Collection.]

Chilpancingo, Guerrero, Mex., 4,000 ft. (H. H. Smith), 1 male. [Acad. Nat. Sci. Phila.]

Chiapas, Mex. (Van Patten), 2 males, 7 females. [Scudder Collection.]

La Zacualpa, Chiapas, Mex., 1 male, 1 female. [Am. Mus. Nat. Hist.]

Male specimens before us showing the extreme condition of delicate, more evenly curved and toothless forceps, come from the following localities; one, Sycamore Cañon, Baboquivari Mts., Ariz.; one, Cuernavaca, Mor., Mex.; one, Rio Madeira, Brazil. The other male from the Baboquivari Mts. also shows this extreme condition except that it possesses a decided inner tooth. The greater part of the rest of the series is more nearly typical of the heavier condition.

Doru aculeatum (Scudder).

1862. *Forficula aculeata* Scudder, Proc. Bost. Soc. Nat. Hist., XVIII, p. 262. (New York; Northern Illinois; Southern Michigan; Cuba?)

1862. *Forficula aculeata* Scudder, Bull. U. S. Geol. Surv. Terr., II, p. 256. (Key.)

Described from a series of three males and five females from three authentic and one questioned locality.



5.

Dorsal outline of *Doru aculeatum*, from Mineral Springs, Indiana.

Single type here designated: male; Southern Michigan. (M. Miles.) [Scudder Collection.]

The wings are not absent in this species, as Scudder states in his

original description, but are merely aborted and hidden under the tegmina; the male forceps are well described by Scudder. Variation is found from this sturdy, more sharply bowed type of male forceps to one in which the curvature is much as in *D. lineare*, these specimens being mainly distinguishable by the aborted and concealed wings and longer pygidial spine. A number of males from Nebraska and Georgia are of this more delicate type, while the single male from Burton, Georgia, shows a decided general increase in size and an accompanying attenuation. In coloration no distinct features exist to separate the present species from *D. lineare*.

MEASUREMENTS (IN MILLIMETERS), OF VARIOUS EXTREMES.

	Mineral Springs, Ind.		Peru, Nebr.		Burton, Ga., Rabun County.		Puckhead, Ga., Fulton County.	
	Males.	Females.	Males.	Females.	Male.	Female.	Male.	Female.
Length of body	9.3-10.9	6.9-8.8	7.8-10.7	8 -9.8	12	9.6	7.8	8.7
Length of pronotum.	1.6- 1.8	1.4-1.8	1.6- 2	1.8-1.9	2	1.8	1.7	1.7
Length of tegmen . .	2.3- 2.7	2 -2.3	2.4- 2.7	2.7-2.8	2.6	2.7	2.1	2.7
Length of forceps. . .	4.7- 6.3	3 -3.2	3.6- 6.5	3.3-3.6	6.8	3.4	3.8	3.6
Length of pygidial spine.8- 1	—	.8- 1.1	—	.9	—	.7	—

Specimens Examined.—38; 16 males, 19 females, 3 with abdomen missing.

Northern Michigan (M. Miles), 1 male. Type. [Scudder Collection.]

Mineral Springs, Indiana, Oct. 2, 1910 (W. J. Gerhard), 4 males, 3 females. [Acad. Nat. Sci. Phila. and Hebard Collection.]

West Point, Nebraska, May, 1888, 2 males, 2 females. [Hebard Collection ex Bruner.]

Peru, Nebr., May 1, 1910 (Bruner), 6 males, 3 females. [Hebard Collection.]

New York, 1 adult. [Scudder Collection ex Uhler.]

Pennsylvania, 1 female. [Acad. Nat. Sci. Phila.]

Tryon, North Carolina (W. F. Fiske), 1 female, on *Juglans* sp. [U. S. Nat. Mus.]

Cumberland Gap, Kentucky (G. Dimmick, 1 male. [Scudder Collection.]

Burton, Rabun County, Georgia, May 21, 1911, 1,800 ft. (J. C. Bradley), 1 male, 2 females. [Ga. State. Collection.]

Thompsons Mills, Ga., April, 1911 (Allard), 1 female. [U. S. Nat. Mus.]

Austell, Ga., Aug. 6, 1910, 1 female. [Ga. State Collection.]

Buckhead, Fulton County, Ga., April 16, 1911, 1 male, 2 females, 2 adults; Aug. 2, 1913 (R. & H.), 2 females. [Ga. State Collection, Acad. Nat. Sci. Phila. and Hebard Collection.]

Atlanta, Ga., July, 1 female. [Ga. State Collection.]

Doru davisi new species.

Distinguished from its nearest ally, *D. aculeatum*, by the more attenuate general structure, in the male sex by the very much longer pygidial spine and very different forceps.

Type: Male; South Bay, Lake Okeechobee, Florida. May 2, 1912. (Wm. T. Davis.) Hebard Collection.



6

Doru davisi, n. sp. Dorsal outline of type.



7



8

Lateral outline of male forceps of *Doru aculeatum* (7; Mineral Springs, Indiana) and *Doru davisi* (8; type).

Description of type: Size rather large for genus; form attenuate; surface polished, with abdominal segments very finely punctate excepting the distal segment. Head, pronotum, tegmina and wings as in *D. aculeatum*, the wings aborted and wholly concealed by the tegmina as in that species. Abdomen more produced, the proximal joints more compressed than in *aculeatum*. Forceps longer than abdomen, the proximal fourth stout, triquetral, with the ventro-internal margins of this portion weakly and rather distantly supplied with tubercles. Pygidial spine decidedly acicular, considerably longer than the distal abdominal segment.

Color: In general chestnut brown shading to chestnut on the forceps; limbs, lateral margins of dorsum of pronotum and cephalic portions of tegmina mummy brown.

Allotype: Female; the specimen bears the same data as the type. This specimen is slender and colored much as the type. Otherwise it is inseparable from the same sex of *aculeata*.

In addition to the type and allotype we have three males, nine females and two nymphs, bearing the same data as the type, which may be considered paratypes.

MEASUREMENTS¹ (IN MILLIMETERS).

	Type, Male.	Paratyptic Male.	Allotype, Female.	Paratyptic Female.
Length of body.	11	11.6	8.3	8.5
Length of pronotum.	1.9	1.9	1.6	1.6
Length of tegmen.	3	2.7	2.1	2.6
Length of forceps.	8.7	6.6	3.3	3.5
Length of pygidial spine	2.2	1.8	—	—

The present species appears to be the extreme development from a common ancestor with *D. aculeatum*. The tremendously produced pygidial spine is found in another otherwise very different species, *Doru spiculiferum* Kirby, described from New South Wales, Australia.

RECORDS OF DERMAPTERA AND ORTHOPTERA FROM WEST CENTRAL AND SOUTHWESTERN FLORIDA, COLLECTED BY WILLIAM T. DAVIS.

BY JAMES A. G. REHN AND MORGAN HEBARD.

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In the past two years Mr. Wm. T. Davis, of New Brighton, Staten Island, has submitted to us for examination several series of Dermaptera and Orthoptera taken by him in northern, west central and southwestern Florida. The present paper is an annotated list of the material secured by him in west central and southwestern Florida, the records from northern Florida not being included, as the authors are at present engaged in studying an extensive series from that region and the adjacent portion of Georgia.

¹ These measurements indicate decided variability in the species when the differences between the two known males are noted.